CLAIMS

What is claimed is:

5   1.   A content display device for presenting content data and processing data, the
content display device comprises:

data processing circuitry operably coupled to receive inputs regarding functionality of an
external content processing device and to process the inputs to produce data regarding the
10   functionality of an external content processing device;

content display module operably coupled to process the content data for presentation;
and

15   transceiving module operably coupled to the data processing circuitry and the content
display module, wherein the transceiving module receives the content data via a channel
coupling the content display device to the external content processing device, wherein the
transceiving module modulates the data to produce modulated data and transmits the
modulated data to the external content processing device via the channel.

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2.   The content display device of claim 1, wherein the data processing module further
comprises:

input device operably coupled to receiving an input signal and produce therefrom an
25   analog input signal; and

digitizing module operably coupled to digitize the analog input signal and to produce a
digitized signal, wherein the digitizing module provides the digitized signal as at least
part of the data to the transceiving module.

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3.   The content display device of claim 1, wherein the data comprises at least one of: digitized audio, digitized video, and incoming remote control data and wherein the content data comprises at least one of: audio data, video data, text data, and multimedia data.

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4.   The content display device of claim 3, wherein the remote control data comprises at least one of: volume adjust data, stop data, play data, pause data, rewind data, fast forward data, next track data, channel up/down data, bass boost data, record data, intensity data, contrast data, security access data, and telephone access code data.

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5.   The content display device of claim 4, wherein the transceiving module further comprises functionality to receive modulated display data via the channel, wherein the transceiving module separates the modulated display data from the content data, wherein the transceiving module retrieves display data from the modulated display data, and

15   wherein the transceiving module provides the display data to the data processing module.

6.   The content display device of claim 5, wherein the transceiving module comprises:

20   high pass filter to separate the content data from the modulated display data;

gain module operably coupled to provide gain to the modulated display data to produce gained modulated data; and

25   data extraction circuit operably coupled to retrieve the display data from the modulated display data.

7.   The content display device of claim 6, wherein the data extraction circuit comprises:

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demodulator operably coupled to receive the gain modulated data and to produce therefrom demodulated data;

quantizer operably coupled to receive the demodulated data and to produce therefrom

5 quantized data; and

digital filter operably coupled to receive the quantized data and produce therefrom the display data.

10 8.   The content display device of claim 6, wherein the data extraction circuit comprises:

clock recovery circuit operably coupled to generate a clock signal from the modulated display data;

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a correlator operably coupled to receive the clock signal, wherein the correlator detect patterns of the data contained within the modulated display data to produce correlated data; and

20 phase comparator operably coupled to receive the correlated data and to produce therefrom the display data.

9.   The content display device of claim 5 further comprises:

25 display operably coupled to the data processing module, wherein the data processing module processes the display data to produce display information, wherein the display displays the display information.

10.   The content display device of claim 1, wherein the transceiving module further

30 comprises:

data modulator operably coupled to modulate the data to produce the modulated data; and

injecting circuit operably coupled to inject the modulated data on to the channel such that the modulated data is provided to the external content processing device.

11.   The content display device of claim 10, wherein the data modulator comprises:

pseudo random code generator operably coupled to produce a random code; and

modulator operably coupled to receive the random code and the data to produce the modulated data.

12.   The content display device of claim 10, wherein the injecting circuit comprises:

high pass filter operably coupled to the channel, wherein the high pass filter filters the modulated data to produce filtered data, wherein the filtered data is provided on the channel; and

high frequency isolation module operably coupled to the channel, wherein the high frequency isolation module substantially attenuates the filtered data and passes the content data substantially untenanted such that the content data is isolated from the modulated data.

13.   The content display device of claim 1 further comprises identifying circuitry operably coupled to receive an inquiry via the channel from the external content processing device, wherein the identifying circuitry processes the inquiry to produce content display capabilities, and wherein the identifying circuitry provides the content display capabilities to the transceiving module for transmission via the channel to the external content processing device.

14. A content display device for presenting content data and processing data, the content display device comprises:

data processing circuitry operably coupled to process display data received from an
5 external content processing device;

content display module operably coupled to process content data for presentation; and

transceiving module operably coupled to the data processing circuitry and the content
10 display module, wherein the transceiving module is operably coupled to receive modulated data via a channel that couples the content display device to the external content processing device, wherein the transceiving module separates the modulated data from the content data, wherein the transceiving module retrieves display data from the modulated data, and wherein the transceiving module provides the display data to the
15 data processing module.

15. The content display device of claim 14, wherein the transceiving module comprises:

20 high pass filter to separate the content data from the modulated data;

gain module operably coupled to provide gain to the modulated data to produce gained modulated data; and

25 data extraction circuit operably coupled to retrieve the display data from the modulated data.

16. The content display device of claim 15, wherein the data extraction circuit comprises:

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demodulator operably coupled to receive the gain modulated data and to produce therefrom demodulated data;

quantizer operably coupled to receive the demodulated data and to produce therefrom

5 quantized data; and

digital filter operably coupled to receive the quantized data and produce therefrom the display data.

10 17. The content display device of claim 15, wherein the data extraction circuit comprises:

clock recovery circuit operably coupled to generate a clock signal from the modulated data;

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a correlator operably coupled to receive the clock signal, wherein the correlator detect patterns of the data contained within the modulated data to produce correlated data; and
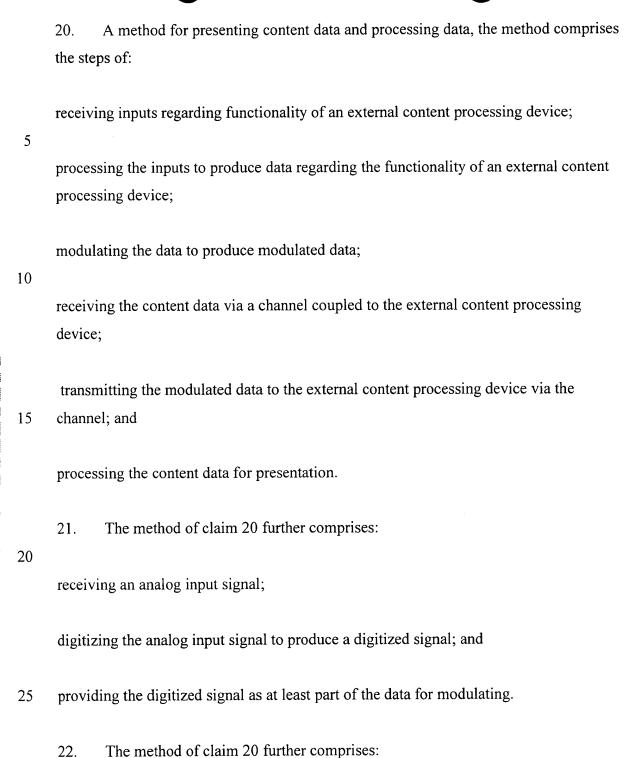
phase comparator operably coupled to receive the correlated data and to produce

20 therefrom the display data.

18. The content display device of claim 14 further comprises:

display operably coupled to the data processing module, wherein the data processing

25 module processes the display data to produce display information, wherein the display displays the display information.

19. The content display device of claim 14 further comprises identifying circuitry operably coupled to receive an inquiry via the channel from the external content

30 processing device, wherein the identifying circuitry processes the inquiry to produce content display capabilities, and wherein the identifying circuitry provides the content

display capabilities to the transceiving module for transmission via the channel to the external content processing device.

20.   A method for presenting content data and processing data, the method comprises the steps of:

receiving inputs regarding functionality of an external content processing device;

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processing the inputs to produce data regarding the functionality of an external content processing device;

modulating the data to produce modulated data;

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receiving the content data via a channel coupled to the external content processing device;

transmitting the modulated data to the external content processing device via the

15   channel; and

processing the content data for presentation.

21.   The method of claim 20 further comprises:

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receiving an analog input signal;

digitizing the analog input signal to produce a digitized signal; and

25   providing the digitized signal as at least part of the data for modulating.

22.   The method of claim 20 further comprises:

receiving modulated display data via the channel;

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separating the modulated display data from the content data;

retrieving display data from the modulated display data; and

displaying the display data.

23.   The method of claim 22, wherein the separating and retrieving further comprise:

high pass filtering the channel to separate the content data from the modulated display data;

providing gain to the modulated display data to produce gained modulated data; and

extracting the display data from the modulated display data.

24.   The method of claim 23, wherein the extracting further comprises:

demodulating the gain modulated data to produce demodulated data;

quantizing the demodulated data to produce quantized data; and

digital filtering the quantized data to produce the display data.

25.   The method of claim 23, wherein the extracting further comprises:
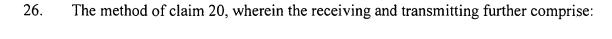
generating a clock signal from the modulated display data;

correlating patterns of the display data contained within the modulated display data to produce correlated data; and

phase comparing the correlated data and to produce therefrom the data.

26.   The method of claim 20, wherein the receiving and transmitting further comprise:

modulating the data to produce the modulated data; and

5   injecting the modulated data on to the channel with the content data and to produce transceive data that is provided to the external content processing device.

27.   The method of claim 26, wherein the modulating further comprises:

10   generating a pseudo random code; and

modulating the random code and the data to produce the modulated data.

28.   The method of claim 26, wherein the injecting further comprises:

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high pass filtering the modulated data to produce filtered data, wherein the filtered data is provided on the channel; and

high frequency isolating the content data from the modulated data by substantially
20   attenuating the filtered data and passing the content data substantially untenanted.

29.   The method of claim 20 further comprises:

receiving an inquiry via the channel from the external content processing device;

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processing the inquiry to produce content display capabilities; and

providing the content display capabilities to the external content processing device via the channel.

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30.   A method for presenting content data and processing data, the method comprises the steps of:

receiving modulated display data and content data via a channel coupled to an external

5   content processing device;

separating the modulated data from the content data;

retrieving display data from the modulated data;

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processing the display data for display; and

processing the content data for presentation.

15   31.   The method of claim 30, wherein the separating and retrieving further comprises:

high pass filtering the channel to separate the content data from the modulated data;

providing gain to the modulated data to produce gained modulated data; and

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extracting the display data from the modulated data.

32.   The method of claim 31, wherein the extracting further comprises:

25   demodulating the gain modulated data to produce demodulated data;

quantizing the demodulated data to produce quantized data; and

digital filtering the quantized data to produce the display data.

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33.   The method of claim 31, wherein the extracting further comprises:

generating a clock signal from the modulated data;

detecting patterns of the data contained within the modulated data to produce correlated

5   data; and

phase comparing the correlated data to produce the display data.

34.   The method of claim 30 further comprises:

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receiving an inquiry via the channel from the external content processing device;
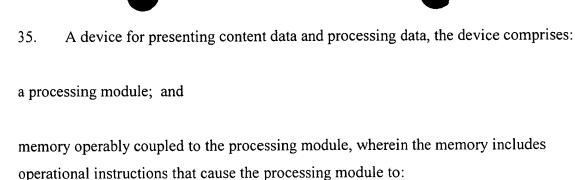
processing the inquiry to produce content display capabilities; and

15   providing the content display capabilities to the external content processing device via the

channel.

35. A device for presenting content data and processing data, the device comprises:

a processing module; and

5 memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive inputs regarding functionality of an external content processing device;

10 process the inputs to produce data regarding the functionality of an external content processing device;

modulate the data to produce modulated data;

15 receive the content data via a channel coupled to the external content processing device;

transmit the modulated data to the external content processing device via the channel; and

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process the content data for presentation.

36. The device of claim 35, wherein the memory further comprises operational instructions that cause the processing module to:

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receive an analog input signal;

digitize the analog input signal and to produce a digitized signal; and

30 provide the digitized signal as at least part of the data for modulating.

37.   The device of claim 35, wherein the memory further comprises operational instructions that cause the processing module to:

receive modulated display data via the channel;

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separate the modulated display data from the content data;

retrieve display data from the modulated display data; and

10   display the display data.

38.   The device of claim 37, wherein the memory further comprises operational instructions that cause the processing module to separate the modulated display data from the content data and retrieve display data from the modulated display data by:

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high pass filtering the channel to separate the content data from the modulated display data;

providing gain to the modulated display data to produce gained modulated data; and

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extracting the display data from the modulated display data.

39.   The device of claim 38, wherein the memory further comprises operational instructions that cause the processing module to extract the display data from the

25   modulated display data by:

demodulating the gain modulated data to produce demodulated data;

quantizing the demodulated data to produce quantized data; and

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digital filtering the quantized data to produce the display data.

40. The device of claim 38, wherein the memory further comprises operational instructions that cause the processing module to extract the display data from the modulated display data by:

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generating a clock signal from the modulated display data;

correlating patterns of the display data contained within the modulated display data to produce correlated data; and

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phase comparing the correlated data and to produce therefrom the data.

41. The device of claim 35, wherein the memory further comprises operational instructions that cause the processing module to receive the content data via a channel

15 coupled to the external content processing device and transmit the modulated data to the external content processing device via the channel by:

modulating the data to produce the modulated data; and

20 injecting the modulated data on to the channel with the content data and to produce transceive data that is provided to the external content processing device.

42. The device of claim 41, wherein the memory further comprises operational instructions that cause the processing module to modulate the data by:

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generating a pseudo random code; and

modulating the random code and the data to produce the modulated data.

30 43. The device of claim 41, wherein the memory further comprises operational instructions that cause the processing module to inject the modulated data by:

high pass filtering the modulated data to produce filtered data, wherein the filtered data is provided on the channel; and
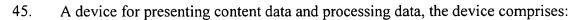
5   high frequency isolating the content data from the modulated data by substantially attenuating the filtered data and passing the content data substantially untenanted.

44.   The device of claim 35, wherein the memory further comprises operational instructions that cause the processing module to:

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receive an inquiry via the channel from the external content processing device;

process the inquiry to produce content display capabilities; and

15   provide the content display capabilities to the external content processing device via the channel.

45.   A device for presenting content data and processing data, the device comprises:

a processing module; and

5   memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to:

receive modulated display data and content data via a channel coupled to an external content processing device;

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separate the modulated data from the content data;

retrieve display data from the modulated data;

15   process the display data for display; and

process the content data for presentation.

46.   The device of claim 45, wherein the memory further comprises operational

20   instructions that cause the processing module to separate the modulated data from the content data and retrieve display data from the modulated data by:

high pass filtering the channel to separate the content data from the modulated data;

25   providing gain to the modulated data to produce gained modulated data; and

extracting the display data from the modulated data.

47.   The device of claim 46, wherein the memory further comprises operational

30   instructions that cause the processing module to extracting the display data from the modulated data by:

demodulating the gain modulated data to produce demodulated data;

quantizing the demodulated data to produce quantized data; and

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digital filtering the quantized data to produce the display data.

48.   The device of claim 46, wherein the memory further comprises operational

instructions that cause the processing module to extracting the display data from the

10   modulated data by:

generating a clock signal from the modulated data;

detecting patterns of the data contained within the modulated data to produce correlated

15   data; and

phase comparing the correlated data to produce the display data.

49.   The device of claim 45, wherein the memory further comprises operational

20   instructions that cause the processing module to:

receive an inquiry via the channel from the external content processing device;

process the inquiry to produce content display capabilities; and

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provide the content display capabilities to the external content processing device via the

channel.